Electronic Supplementary Material (ESI) for Dalton Transactions.

Supplementary information

A terbium(III) lanthanide-organic framework as selective and sensitive iodide/bromide sensor in aqueous medium

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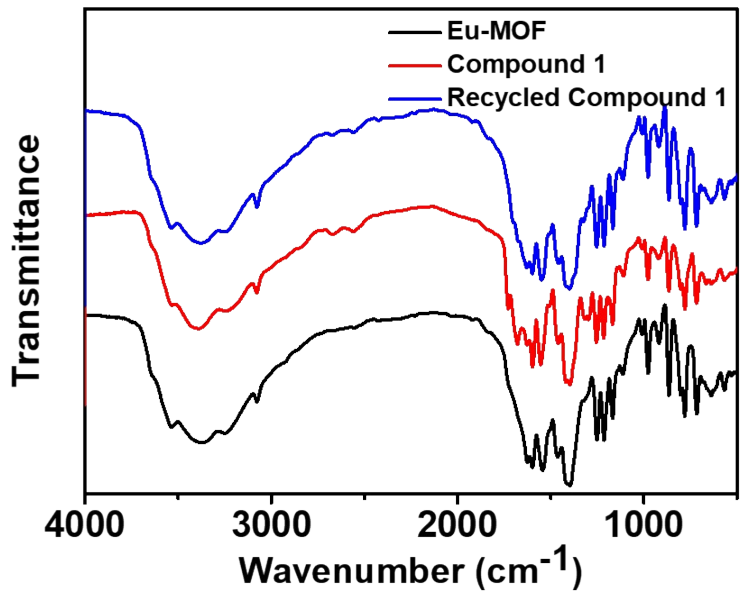

Fig. S1 FTIR spectra of compound **1** (red line), recycled compound **1** (blue line) and Eu-MOF (black line).

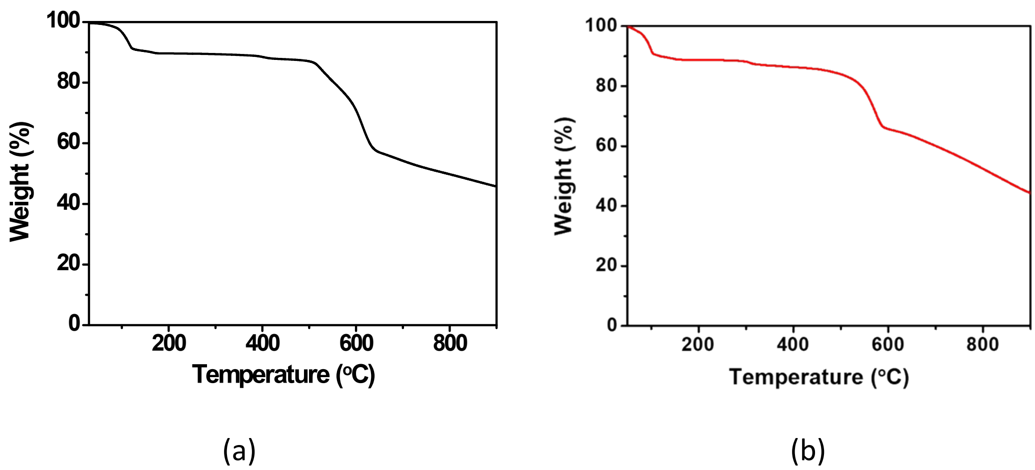

Fig. S2 The TGA curves for compounds **1** (a), Eu-MOF (b) heated from room temperature to 900 ºC under N_2 atmosphere at the heating rate of 5 °C·min^{-1}.

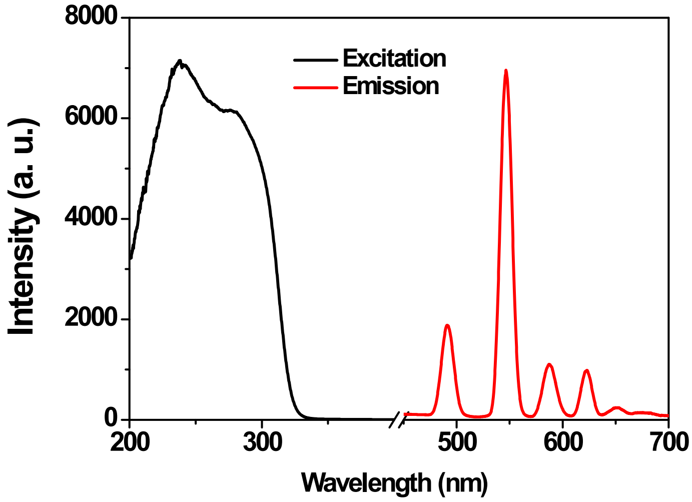

Fig. S3 Excitation spectrum (λ_{em}=547 nm) and emission spectrum (λ_{ex}=239 nm) of compound **1.**

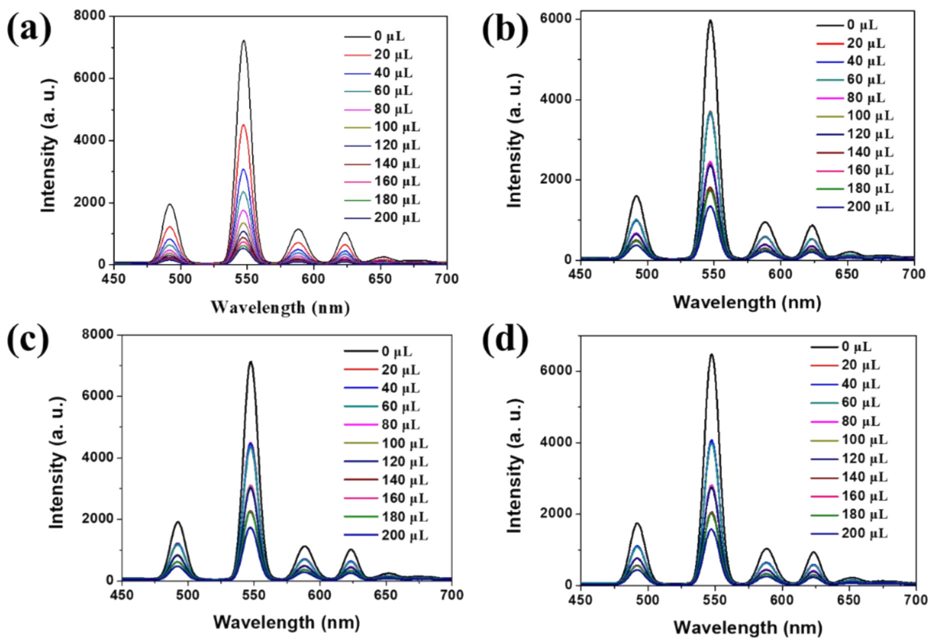

Fig. S4 Photoluminescence spectra of compound **1** upon progressive addition of the I^- aqueous solution (0.01 M, 20 μL addition each time) (a); Tracked Emission spectra of compound **1** upon the addition of I^- anions in the presence and absence of Br^- (b); CO_3^{2-} (c); PO_4^{3-} (d).

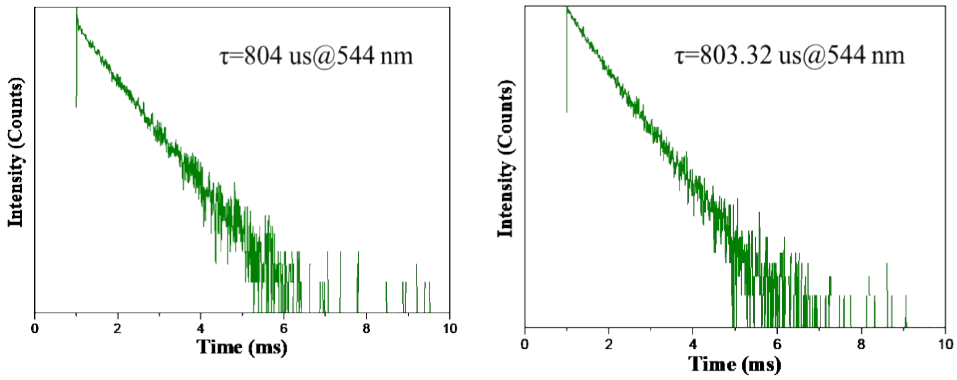

Fig.S5 Decay curves for Tb^{3+} $^5D_4 \rightarrow ^7F_5$ emission in aqueous dispersion of compound **1** before(left) and after(right) the addition of I^-.

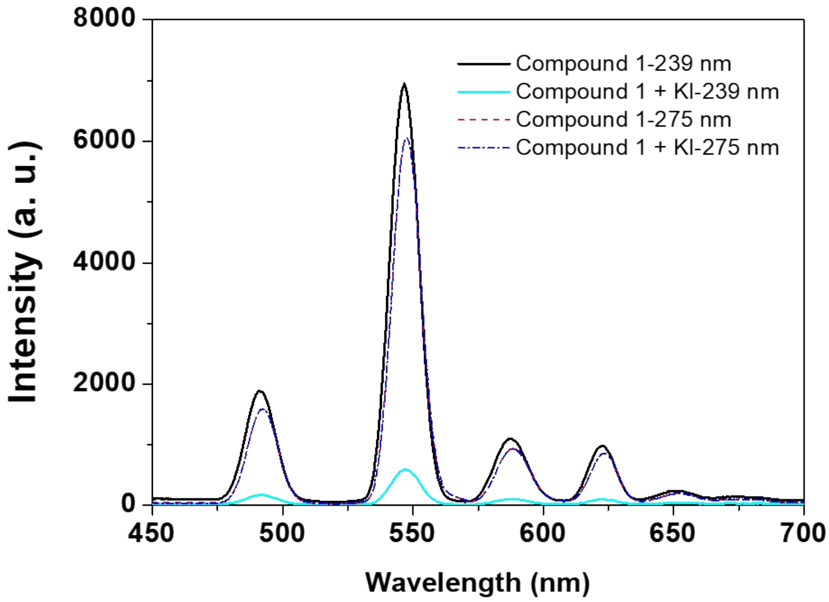

Fig.S6 Photoluminescence spectra of compound **1** in the presence or absence of I^- (Conc.=1 mM) in water excited upon 239 or 275 nm.

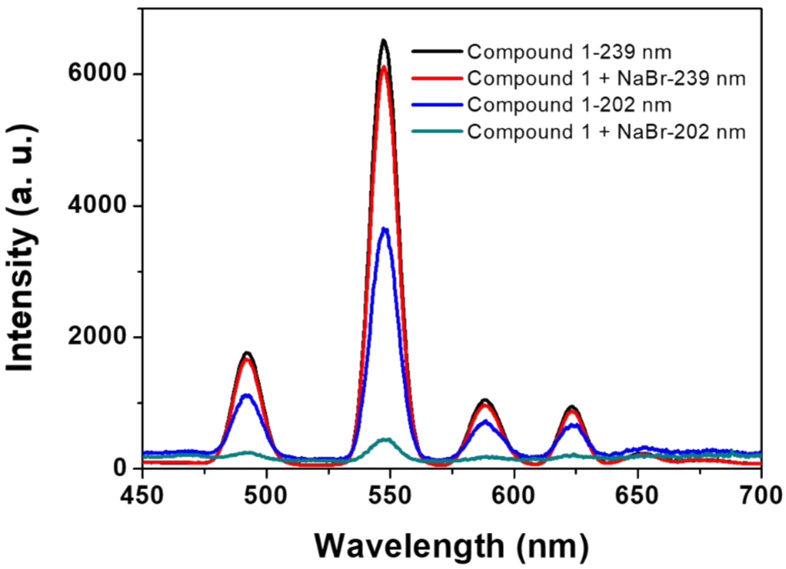

Fig.S7 Photoluminescence spectra of compound **1** in the presence or absence of Br^- (Conc.=1 mM) in water excited upon 239 or 202 nm.

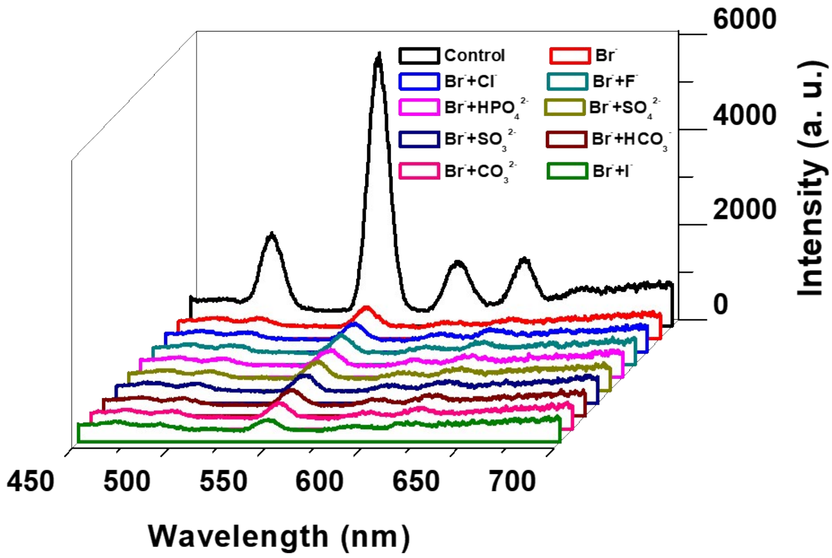

Fig. S8 Fluorescence intensity of **1** in water in the presence of bromide and with addition of 1 mM different anions excited upon 202 nm.

Table 1. Comparison of the Iodide Detection Efficiency of **1** with Other Sensors

	I- sensors	Methods	Ksv (M^{-1})	LOD (μM)	Refs
1	IPF	fluorescence turn off	4310	0.80	1
2	Cz-TPM	fluorescence turn off	2372	7.9	2
3	benzimidazole-based tripodal receptor	fluorescence turn off	(1.5 ± 0.2) × 10^3	7.45	3
4	imidazolium-based cyclophane	colorimetric	Not given	10	4
5	quinoxaline-based azine derivatives	colorimetric	Not given	4.77	5
6	D–A type Zn(II) complexes	fluorescence turn off	Not given	0.58	6
7	NC-PNPs-Hg(II) nanocomplex	fluorescence turn off	Not given	0.9	7
8	Cu(I)-MOF	colorimetric	Not given		8
9	Tb/Zn Hetero-MOF	fluorescence turn off	1.8×10^5	0.01	9
10	Cd-MOF	fluorescence turn off	1.8×10^4	0.63	10
11	1	fluorescence turn off	1.23×10^4	2.29	This work

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